

## show report

## EID '95: International Giants and Local Flair

*Texas Instruments, Rank Brimar, Hitachi, and local CRT-monitor makers shine at London's Sandown Park.*

by Bryan Norris

THE "Flat Panel and Other Conventional Displays Show," otherwise known as the Electronic Information Displays Show (EID), was held at the Sandown Park Exhibition Centre, SE London, November 14–17, 1995. The SID-sponsored show once again proved to be an ideal opportunity to see what types of displays were available – or soon would be available – not just in the U.K. but worldwide. The associated 3-day technical conference concentrated on LCDs and other flat-panel-display products.

New-technology flat panels – especially LCDs – were copiously exhibited throughout the show, both as modules and as enclosed stand-alone units. And many of the exhibitors were showing an assortment of touch screens. Nevertheless, EID was also a reminder of the many conventional CRT-based monitors – many of them open-frame industrial types – offered by a thriving U.K.-based industry.

As at the SMAU show in Italy, there was evidence of the smaller, niche-market CRT-monitor makers extending their wares intended for information systems. For an example, Italian-link *Hantarex, Ltd.* – at one time just a relatively small arm of the giant

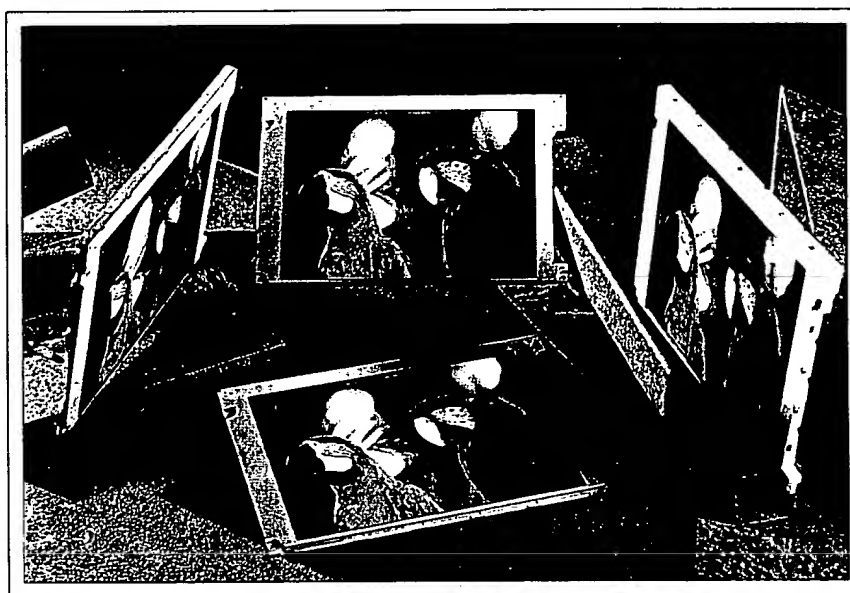
million-monitors-a-year Italian company of the same name – has risen phoenix-like to continue to provide large-screen CRT monitors for use in applications such as airports and railway terminals. The extensive range of these displays *Hantarex* exhibited at EID is manufactured by *Sanbers* in Milan.

A small South London manufacturer, *P. D. Systems*, was promoting its *Colourmaster* range, which extends from 14/15-in. 24-Vdc open-frame units for mobile applications, through 21-in. CCTV security-system models,

to *P. D.*'s latest 28-in. (4:3 and 16:9 ratio) CGA-to-SVGA information displays.

*Emco*, another company manufacturing in London, was exhibiting its range of 10–28-in. CRT monitors intended for industrial, commercial, and public-information systems.

*Emco* also has a new range of sunlight-readable color LCDs in 8.4- and 10.4-in.-diagonal sizes. These generate 5800 cd/m<sup>2</sup> of uniform surface luminance and provide a contrast ratio of 10:1 in 100,000-lux (direct sunlight) ambient conditions.



Hitachi

Fig. 1: The Hitachi 13.3-in. LCD panel uses IPS to achieve a 140° horizontal viewing angle, which made it one of the stars of EID '95.

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This "We supply conventional CRT displays but now also offer new technology products" theme was to be seen throughout the EID show. For example, the U.K.'s largest indigenous monitor manufacturer, *Microvitec* – the maker of *Electrohome* models as well as its own brand – was exhibiting its latest open-frame and enclosed CRT units and promoting its newly formed Customs Applications Group. And, in addition, *Microvitec* was giving the first public showing of a range of 10.4-in. TFT-LCD stand-alone monitors in both cased desktop models and open-frame versions aimed at system integrators.

The company's 26V enclosed CRT Proteus model comes in a variety of cabinet sizes, shapes, materials, and positioning mechanisms. All types incorporate an analogue controller board allowing the user to connect directly to the output of any standard VGA port, and surface-mounted components are used to minimize depth. Touch screens are also available on a number of *Microvitec*'s products.

Similarly, *KME*, another long-established U.K. manufacturer of open-frame and cased CRT monitors – both color and monochrome – was also exhibiting industry-orientated metal-cased color VGA LCD monitors. The included remote-control unit could be detached and positioned in the OEM equipment by means of a simple extension cable.

*Ginsbury* – an outlet of *Aydin Controls* monitors and other commercial, industrial, and military display products – was also prominently displaying on its stand a rugged-construction 14-in. GE 14 LCD monitor. This has an optional tough polystyrene enclosure, with front and rear sealing, and runs from a 12-V supply. The GE 14 retails at around £5000 (US\$7500) and *Ginsbury* also has industrial 10.4-in. VGA models for around £3500 (US\$5250) and 12-in. SVGA models at approximately £7000 (US\$10,500). *Ginsbury* also offers optional touch-screen models.

As well as these locally produced units, there was a multitude of world-famed LCD modules and stand-alone units to be seen at EID. *CTX*-branded products – both in module and cased forms – were being promoted on the stand of *Components Bureau*, for example. *Citizen*'s units were shown on the *Anders Electronics*' booth. *Sun Up Computer*'s flat-screen display monitors and the extensive

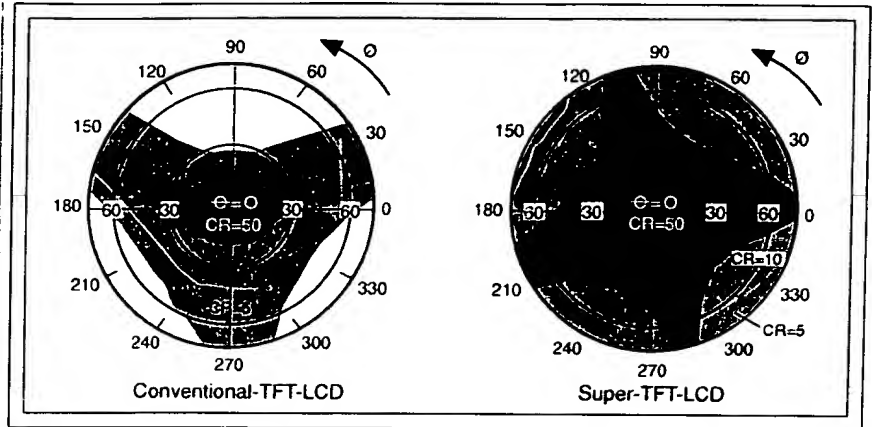


Fig. 2: The contrast map of a display using Hitachi's new IPS structure demonstrates that the new structure gives viewing angles greater than  $140^\circ$  in both the horizontal and vertical planes. The dark blue region, showing the area with a contrast ratio of 50, has the best image. (Courtesy of Hitachi)

*SlimAGE*® range of FPDs from *Soaring Technology* are handled by *Craft Data*. A late entry to the show, *Digital View Ltd*, is a newly established subsidiary office of the Hong Kong based *Asia Concept*, the manufacturer of the *Sygnos* product range. Thus, *Digital View* is able to offer *Sygnos* units directly to purchasers without distribution charges. And the most famous LCD maker of them all, *Sharp*, included in its announcements the space-saving LC-10C1M 10.4-in. 4096-color VGA monitor. This unit measures just  $306 \times 58 \times 243$  mm (without its stand) and weighs only 2.1 kg.

Distributor *Hawke* claimed that it had the world's largest mass-production color LCD, scheduled for volume production in January 1996: the economically priced *Kyocera* 14.2-in. display employing the latest STN technology. *Farnell Mercator* boasted that it had just become the exclusive U.K. distributor of the (only) European LCD manufacturer, *FPD*. Distributor *RDS* reported that it had received the prestigious *Optrex* worldwide distributor-of-the-year award and secured a *Planar International* distributorship. *Planar* was also represented at EID by *Manhattan Skyline*.

There were a large variety of touch screens at the show, ranging from capacitive and resistive units from the world's leading touch-screen manufacturer – the \$60-million sales operation, *MicroTouch Systems* – to a neat, cheap (£395/\$600), self-contained unit from

*Intrasolve* that can be simply attached to conventional 14-in. CRT monitors. *MicroTouch* has its headquarters in the U.S.A., a wholly owned European manufacturing/sales facility in England, and European sales/technical centers in Germany and France. *Intrasolve*, on the other hand, is a small English company that specializes in the design and manufacture of infrared touch screens. Its *Interact 400*, launched at EID, uses innovative design, injection-molded casing, and surface-mounted PCBs to achieve a low-cost but professional unit.

#### From Texas to Sandown: Digital Light Processing

Some of the main attractions of the EID show were to be seen employing *Texas Instruments*' Digital Light Processing® (DLP®) technology, incorporating Digital Micromirror Devices™ (DMDs™), shown on *TI*'s stand. *Nokia* showed its 50-in. 16:9-ratio wide-screen DMD-based rear-projection TV. This prototype was recently previewed at the IFA in Berlin. It has an impressive, sharp, nearly seamless cinema-like picture quality, even in the harsh lighting conditions of the show booth. *Nokia* plans to be the first selling this type of high-tech TV to the consumer market. You should be able to buy one beginning in November 1996.

*Rank Brimar*, which has collaborated with *TI* since 1989, now has an extremely high-

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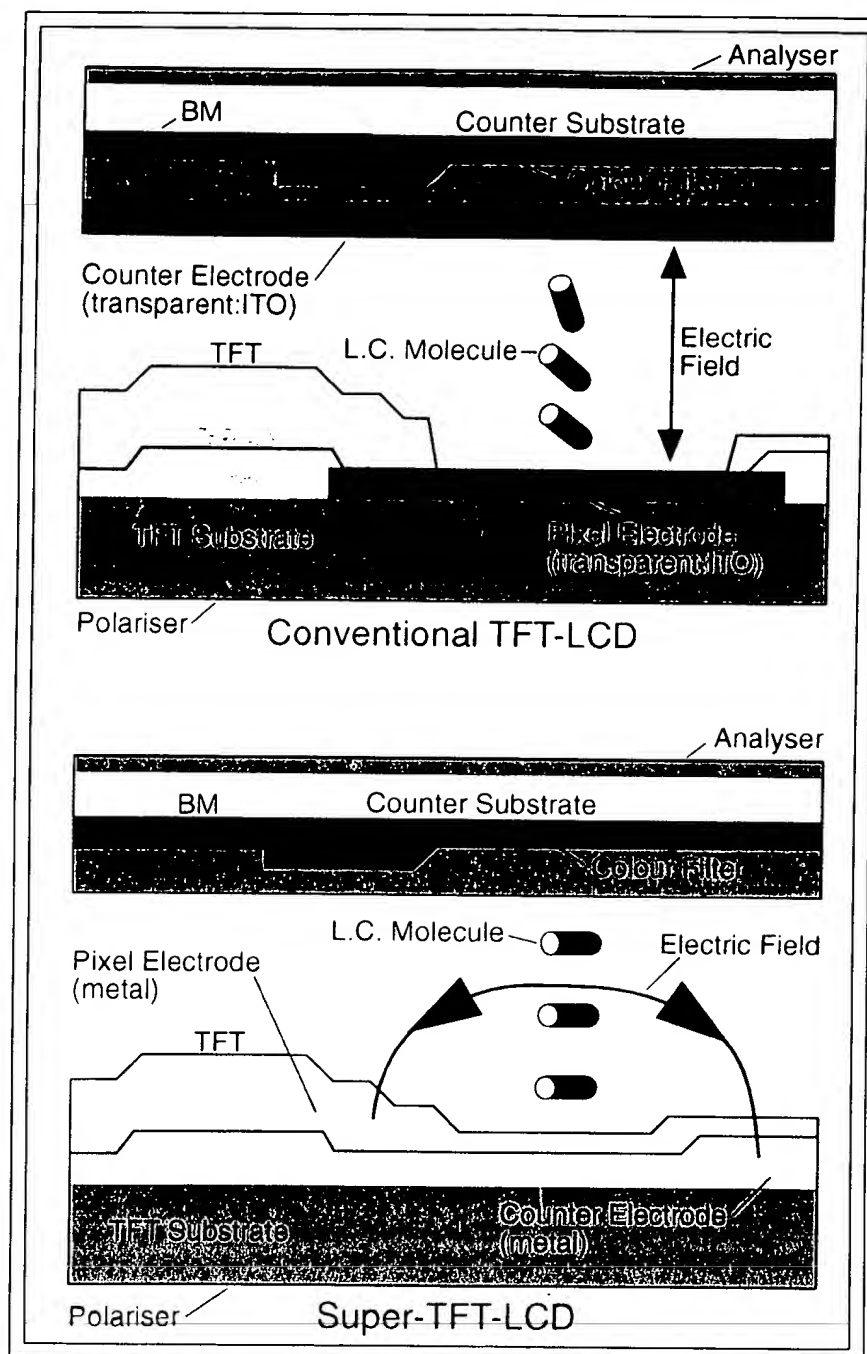


Fig. 3: With Hitachi's IPS, the liquid-crystal molecules always have their longitudinal axes parallel to the substrate plane. The cross sections of a conventional TFT-LCD (top) and a super-TFT-LCD (bottom) are therefore very different, as are the geometries of their electric fields. (Courtesy of Hitachi)

brightness digital-video projector that uses DMDs. Very-large-screen demonstrations of its capabilities were repeatedly provided in a fair-sized room at the far end of the exhibition floor. Although the demonstration unit was only a prototype, the quality and clarity of the pictures, derived only from videotape and PAL signals, were absolutely brilliant. Production units are promised by the end of 1996.

A dissertation of the possible involvement of DMDs in future LCD projectors is given in the *Jon Peddie Associates* "Review of the LCD Projection Industry" announced by meko at the show. meko is a U.K. displays consultancy that publishes the weekly *Display Monitor* newsletter, acts as the European JPA agent, and supplies DisplayMate test software.

Last, but certainly not least, was a veritable star of the show: the Hitachi 13.3-in. "super" LCD panel, which uses in-plane switching (IPS) to achieve a very broad viewing angle (Fig. 1). The prototype unit on the stand demonstrated admirably the fact that the new structure gave viewing angles greater than 140° in both the horizontal and vertical planes with little color over the viewable range (Fig. 2).

In a conference lecture, Julian Parfitt of Hitachi explained how the new structure achieves these impressive characteristics. With IPS, the liquid-crystal molecules always keep their longitudinal axes parallel to the substrate plane (Fig. 3). The performance of the IPS modules makes them suitable for most multi-viewer applications, which makes these modules a much greater challenge to displays using CRTs. The first super-TFT panel samples are forecast to be 256k-color XGA (1024 × 768) modules. Hitachi says they will be available in the first quarter of 1996 at a price of less than £2500 (US\$3750). Full production is expected in mid-1996.

EID '96 will be held in conjunction with the 16th International Display Research Conference - EuroDisplay '96 - at the Metropole Hotel complex, National Exhibition Centre, near Birmingham, from September 30 to October 3, 1996. ■

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